

Abstract:

Method and Device for Atomizing Metal Melts

5 In a method for atomizing metal melts, in which the liquid  
metal bath is sprayed from a tundish via an outlet opening by  
the aid of a gas into a cooling chamber, or onto a surface to  
be coated while compacting the comminuted particles by the aid  
of a propellant gas, the liquid metal melt via an annular gap  
10 is introduced into the outlet opening, into which a hot gas  
having a temperature of between 250°C and 1300°C and a  
supercritical pressure of between 2 and 30 bars is ejected  
through a Laval nozzle concentrically with said opening. The  
hot gas is contacted with the melt bath at a speed exceeding  
15 supersonic speed, with a radial outwardly directed component  
or with a twist.

The device for carrying out the method includes a melt tundish  
(1) and an immersion tube (4) immersed in the melt (2) while  
20 forming an annular gap surrounding the outlet opening for the  
melt (2) and a lance (7) for the ejection of a propellant gas,  
wherein the height-adjustable lance (7) carries a Laval nozzle  
(9). (Fig. 1)

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